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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,723	12/30/2003	Amin M. Godil	D/A3511 XERZ 2 00674	9054
27885	7590	06/07/2006	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			LIANG, LEONARD S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/749,723	<b>Applicant(s)</b> GODIL ET AL.	
	<b>Examiner</b> Leonard S. Liang	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,10,11,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 8-9 and 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

Claim 1 is objected to because of the following informalities: Claim 1 discloses "adjusting supplied power from the predetermined amount to an adjusted amount for realizing the desired ink melt rate including calculating a temperature correction factors..." This is not correct grammar. It will be construed that the claim should state, "adjusting supplied power from the predetermined amount to an adjusted amount for realizing the desired ink melt rate including calculating a temperature correction **factor**..." (emphasis mine). Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 10-11, and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen et al (US Pat 5406315).

Allen et al discloses:

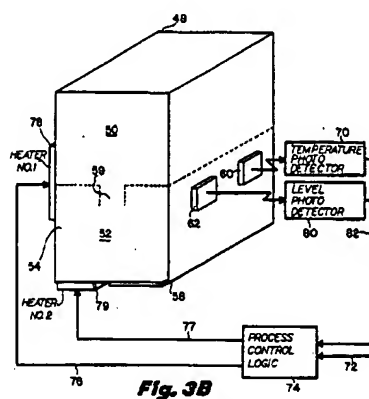
- {claim 1} A method for selectively controlling supplied power to an ink melt heater for maintaining a desired ink melt rate despite a varying ambient parameter affecting an actual melt rate (column 3, lines 1-22; varying ambient parameter is ink temperature); supplying a predetermined amount of power to

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the ink melt heater intended to cause the desired ink melt rate (column 3, lines 1-22; column 9, lines 12-37); detecting an ambient parameter to the ink melt heater (column 9, lines 12-37; ink temperature is ambient parameter); determining if the detected ambient parameter will cause a variance in the actual ink melt rate from the desired ink melt rate (column 9, lines 12-37); adjusting supplied power from the predetermined amount to an adjusted amount for realizing the desired ink melt rate including calculating a temperature correction factor calculated to offset the variance and varying the supplied power by the temperature correction factor (column 9, lines 12-37; ink temperature error signal and varying reflectivity optical signals represents temperature correction factor)

- {claim 2} wherein detecting the ambient parameter comprises sensing a factor representative of at least one of local environment air temperature or adjacent ink temperature (column 9, lines 12-37)
- {claim 3} wherein the sensing of the factor representative of adjacent ink temperature is made prior to a start of a melt duty cycle (naturally suggested since ink sensing occurs continuously)
- {claim 4} A system for adapting power control to an ink melt heater for changing phase of an ink stick from solid to liquid at a selected melt rate (figure 3B); a tray for holding a solid phase ink stick and having an open end for egress of liquid phase ink during heating (figure 3C, reference 84); a heater disposed at the open end to contact the ink stick (figure 3C, reference 92); a reservoir disposed near the heater for receiving the liquid phase ink after heating; a power supply for

supplying energy to the heater, a control circuit for adjusting the supplied energy, a sensor for sensing a parameter consequential to an ink melt rate and wherein the control circuit adjusts the supplied energy in accordance with a temperature correction factor to compensate for a consequential effect of the sensed parameter (column 9, lines 13-37; parameter is changing ink temperature)



- {claim 5} wherein the parameter comprises a temperature of the solid phase ink prior to the melt duty cycle (column 9, lines 13-37)
- {claim 10} An assembly for heating a solid ink supply for changing a phase of the supply from solid to liquid at a desired melt rate (figure 3B); means for holding the solid ink supply to facilitate the heating and permit communication of the melted ink therefrom, means for heating the solid ink supply, a power supply for supplying energy to the heating means, means for sensing an ambient parameter affecting melt rate of the supply, a control circuit for adjusting the supplied energy to the heating means in accordance with a temperature correction factor calculated in response to the ambient parameter wherein the adjusted supplied energy will maintain the desired melt rate (figure 3C; column 9, lines

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12-37; ambient parameter is ink temperature; temperature correction factor represented by varying reflectivity optical signals and temperature error signal)

- {claim 11} wherein the ambient parameter comprises at least one of either local ambient temperature or a starting temperature of the solid phase ink stick prior to a melt cycle (column 9, lines 13-37)
- {claim 15} wherein the control circuit for adjusting the supplied energy to the heating means includes more than two distinct power settings and an additional off setting (column 9, lines 13-37; power setting is variable)
- {claim 16} wherein the sensing of the ambient parameter occurs after the cool down cycle has been completed (naturally suggested since ink is constantly sensed)

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (US Pat 5406315) in view of Alavizadeh et al (US Pat 5424767).

Allen et al discloses, with respect to claim 6, a system (as applied to claim 4 above).

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Allen et al differs from the claimed invention in that it does not disclose that the parameter comprises a factor representative of convection losses to the heater during the melt duty cycle.

Alavizadeh et al discloses, with respect to claim 6, that convection losses are a factor which causes temperature nonuniformity for phase-change ink-jet printers (column 1, lines 57-66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Alavizadeh et al into the invention of Allen et al. The motivation for the skilled artisan in doing so is to gain the benefit of gaining uniform temperature throughout a print head.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (US Pat 5406315) in view of Tanaka et al (JP Pat 61287769 A).

Allen et al discloses, with respect to claim 7, the system (as applied to claim 6 above).

Allen et al differs from the claimed invention in that it does not disclose that the factor comprises local ambient temperature to the system.

Tanaka et al discloses, with respect to claim 7, that the factor comprises local ambient temperature associated with the heater (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Tanaka et al into the invention of Allen et al. The motivation for the skilled artisan in doing so is to gain the benefit of being able to take into account other factors that might influence ink characteristics, such as ambient temperature.

### *Allowable Subject Matter*

Claims 8-9 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8 and 12 disclose that the sensor comprises a thermistor associated with the heater. Using a thermistor for sensing is well known to one of ordinary skill in the art. However, primary reference Allen et al explicitly discloses, "However, generally speaking, these prior approaches have not proven entirely satisfactory because, among other reasons, they have employed temperature sensors such as thermocouples, thermistors, and temperature sensitive resistors..." (column 1, lines 45-58). Therefore, Allen et al explicitly teaches against using thermistors and it would thus destroy the primary reference to combine a reference which teaches using thermistors for sensing. That is why claims 8 and 12 are objected to as being allowable. Claim 9 depends from objected claim 8 and claims 13-14 depend from objected claim 12.

### *Response to Arguments*

Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



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Classens et al (US Pat 6554386) discloses a printing process and printer suitable for performing the process.

Ikezaki (US Pat 6276790) discloses a hot melt ink jet print head and purging method in the head.

Nishikori et al (US Pat 6227641) discloses an ink jet printing system having heat keeping function.

Ito et al (US Pat 6196672) discloses a hot-melt type ink jet printer having heating and cooling arrangement.

Ikezaki (US Pat 5920330) discloses an ink jet printer capable of performing printing immediately after the end of a wiping operation.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148.

The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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**STEPHEN MEIER**  
**SUPERVISORY PATENT EXAMINER**